

THE CLAIMS:

Please amend the claims as follows:

1. (Previously Presented) A method of limiting communication access between wireless Local Area Network (LAN) terminals of a wireless LAN, comprising:

allocating different subnetwork addresses to respective wireless LAN terminals in a wireless LAN access point;

setting default gateways of the respective wireless LAN terminals as a single access limiter; and

returning a communication packet between the wireless LAN terminals from said access limiter which is set as said default gateways, for providing an access limiting function to limit communication access between the wireless LAN terminals.

2. (Previously Presented) The method according to claim 1, wherein said access limiter comprises two LAN interfaces connected respectively to a wired terminal and said wireless LAN access point, said wireless LAN terminals being connected to said wireless LAN access point, said access limiter comprising:

an access limiting function for passing or dropping a received packet to thereby inhibit or permit communications between the terminals;

a band limiting function for buffering a received packet to process audio packets with priority over other packets;

a routing function for distributing packets selectively to said wired terminal and said wireless LAN access point depending on a destination of the packets;

a Dynamic Host Configuration Protocol (DHCP) server for allocating IP addresses

having different subnets for the respective terminals in response to DHCP requests from said wired LAN terminals; and

an Address Resolution Protocol (ARP) server installed in an existing IP protocol stack.

3. (Currently Amended) The method according to claim 2, wherein, when a first one of the wireless LAN terminals is turned on, said first wireless LAN terminal sends a DHCP request to the wireless LAN access point for automatically resolving its own IP address;

said wireless LAN access point, which operates as a simple bridge between a wireless LAN and a wired LAN, transfers the received DHCP request to the access limiter;

said access limiter, which has a DHCP server function, returns a DHCP response to the DHCP request to said wireless LAN access point, and

said wireless LAN access point, which has received the DHCP response, converts the DHCP response from wired data to wireless data, sends the DHCP response to said first wireless LAN terminal to allow said first wireless LAN terminal to make IP communications according to IP address information allocated from the DHCP server,

wherein, when a second one of the wireless LAN terminals is turned on, said second wireless LAN terminal sends a DHCP request to the wireless LAN access point for automatically resolving its own IP address;

said wireless LAN access point, which operates as the simple bridge between a wireless LAN and a wired LAN, transfers the received DHCP request to the access limiter;

said access limiter, which has the DHCP server function, returns a DHCP response to

the DHCP request to said wireless LAN access point; and

said wireless LAN access point, which has received the DHCP response, converts the DHCP response from wired data to wireless data, sends the DHCP response to said second wireless LAN terminal to allow said second wireless LAN terminal to make IP communications according to IP address information allocated from the DHCP server,

wherein said first wireless LAN terminal sends a packet destined for said second wireless LAN terminal to said access limiter; and

said access limiter transfers the received packet, which is destined for said second wireless LAN terminal, to said second wireless LAN terminal.

4. (Currently Amended) The method according to claim 3, wherein, when said first wireless LAN terminal is turned on, said first wireless LAN terminal sends a DHCP request to the wireless LAN access point for automatically resolving its own IP address;

since the DHCP request [[is]] comprises a broadcast packet, said wireless LAN access point transfers the DHCP request to said access limiter on a wired LAN, and broadcasts the DHCP request to said second wireless LAN terminal;

said access limiter, which has received the DHCP request, sets its own IP address to a predetermined value, and sends IP address information as a response to said first wireless LAN terminal; and

said second wireless LAN terminal, which has received the DHCP request, drops the received packet as the DHCP server is not activated,

wherein, when said second wireless LAN terminal is turned on, said second wireless LAN terminal sends a DHCP request to the wireless LAN access point for automatically

resolving its own IP address;

since the DHCP request comprises a broadcast packet, said wireless LAN access point transfers the DHCP request to said access limiter on the wired LAN, and broadcasts the DHCP request to said first wireless LAN terminal;

said access limiter, which has received the DHCP request, sets its own IP address to a predetermined value, and sends IP address information as a response to said second wireless LAN terminal; and

said first wireless LAN terminal, which has received the DHCP request, drops the received packet as the DHCP server is not activated,

wherein, when a packet is to be sent from said first wireless LAN terminal to said second wireless LAN terminal,

since a subnet of said first wireless LAN terminal is different from a subnet of said second wireless LAN terminal, before said first wireless LAN terminal sends the packet to said access limiter set as said default gateways, said first wireless LAN terminal sends an ARP request to resolve a Media Access Control (MAC) address of said default gateways;

said wireless LAN access point, which has received said ARP request, transfers the ARP request to said access limiter on the wired LAN and said second wireless LAN terminal;

said access limiter which has a same address returns a response to said ARP request, and said second wireless LAN terminal which has a different address drops the packet;

since said first wireless LAN terminal has had the MAC address resolved by the ARP request, said first wireless LAN terminal sends a packet destined for said second wireless LAN terminal to said access limiter; and

if said access limiter is to permit communications between the wireless LAN

terminals, the access limiter returns the received packet and sends the received packet to said second wireless LAN terminal.

5. (Currently Amended) The method according to claim 3, wherein, when said first wireless LAN terminal is turned on, said first wireless LAN terminal sends a DHCP request to the wireless LAN access point for automatically resolving its own IP address;

since the DHCP request is a broadcast packet, said wireless LAN access point transfers the DHCP request to said access limiter on a wired LAN, and broadcasts the DHCP request to said second wireless LAN terminal;

said access limiter, which has received the DHCP request, sets its own IP address to a predetermined value, and sends IP address information as a response to said first wireless LAN terminal; and

said second wireless LAN terminal, which has received the DHCP request, drops the received packet as the DHCP server is not activated,

wherein, when said second wireless LAN terminal is turned on, said second wireless LAN terminal sends a DHCP request to the wireless LAN access point for automatically resolving its own IP address;

since the DHCP request is a broadcast packet, said wireless LAN access point transfers the DHCP request to said access limiter on the wired LAN, and broadcasts the DHCP request to said first wireless LAN terminal;

said access limiter, which has received the DHCP request, sets its own IP address to a predetermined value, and sends IP address information as a response to said second wireless LAN terminal; and

said first wireless LAN terminal, which has received the DHCP request, drops the received packet as the DHCP server is not activated, and

wherein, when a packet is to be sent from said first wireless LAN terminal to said second wireless LAN terminal, since a subnet of said first wireless LAN terminal is different from a subnet of said second wireless LAN terminal, before said first wireless LAN terminal sends the packet to said access limiter set as said default gateways, said first wireless LAN terminal sends an ARP request to resolve a MAC address of said default gateways;

said wireless LAN access point, which has received said ARP request, transfers the ARP request to said access limiter on the wired LAN and said second wireless LAN terminal;

said access limiter which has a same address returns a response to said ARP request, and said second wireless LAN terminal which has a different address drops the packet;

since said first wireless LAN terminal has had the MAC address resolved by the ARP request, said first wireless LAN terminal sends a packet destined for said second wireless LAN terminal to said access limiter; and

if said access limiter is to inhibit communications between the wireless LAN terminals, the access limiter drops the received packet.

6. (Currently Amended) The method according to claim 3, wherein, when said first wireless LAN terminal is turned on, said first wireless LAN terminal sends a DHCP request to the wireless LAN access point for automatically resolving its own IP address;

since the DHCP request [[is]] comprises a broadcast packet, said wireless LAN access point transfers the DHCP request to said access limiter on a wired LAN, and broadcasts the DHCP request to said second wireless LAN terminal;

said access limiter, which has received the DHCP request, sets its own IP address to a predetermined value, and sends IP address information as a response to said first wireless LAN terminal; and

said second wireless LAN terminal, which has received the DHCP request, drops the received packet as the DHCP server is not activated,

wherein, when said second wireless LAN terminal is turned on, said second wireless LAN terminal sends a DHCP request to the wireless LAN access point for automatically resolving its own IP address;

since the DHCP request [[is]] comprises a broadcast packet, said wireless LAN access point transfers the DHCP request to said access limiter on the wired LAN, and broadcasts the DHCP request to said first wireless LAN terminal;

said access limiter, which has received the DHCP request, sets its own IP address to a predetermined value, and sends IP address information as a response to said second wireless LAN terminal; and

said first wireless LAN terminal, which has received the DHCP request, drops the received packet as the DHCP server is not activated, and

wherein, when a packet is to be sent from said first wireless LAN terminal to said second wireless LAN terminal, since a subnet of said first wireless LAN terminal is different from a subnet of said second wireless LAN terminal, before said first wireless LAN terminal sends the packet to said access limiter set as said default gateways, said first wireless LAN terminal sends an ARP request to resolve a MAC address of said default gateways;

said wireless LAN access point, which has received said ARP request, transfers the ARP request to said access limiter on the wired LAN and said second wireless LAN terminal;

said access limiter which has a same address returns a response to said ARP request, and said second wireless LAN terminal which has a different address drops the packet;

since said first wireless LAN terminal has had the MAC address resolved by the ARP request, said first wireless LAN terminal sends a packet destined for said second wireless LAN terminal to said access limiter; and

if said access limiter is to buffer communications between the wireless LAN terminals, the access limiter performs priority control of the received packet depending on a property thereof.

7. (Previously Presented) The method according to claim 1, wherein said access limiter comprises a plurality of LAN interfaces connected respectively to a wired terminal and the wireless LAN access point, said wireless LAN terminals being connected to said wireless LAN access point, said access limiter comprising:

an access limiting function for passing or dropping a received packet to thereby inhibit or permit communications between the terminals;

a routing function for distributing packets selectively to said wired terminal and said wireless LAN access point depending on a destination of the packets; and

a DHCP server for allocating IP addresses having different subnets for the respective terminals in response to DHCP requests from said wired LAN terminals.

8. (Previously Presented) The method according to claim 1, wherein providing the access limiting function to limit communication access between the wireless LAN terminals is done without modifying the existing wireless LAN access point.

9. (Previously Presented) A wireless LAN system, comprising:

a wireless LAN access point configured to wirelessly associate with a plurality of wireless terminals; and

an access limiter configured to control communications between a first of the plurality of the wireless terminals and a second of the plurality of the wireless terminals at the wireless LAN access point,

wherein the first wireless terminal and the second wireless terminal communicate through the access limiter, and

wherein each of the first wireless terminal and the second wireless terminal are allocated different subnetwork addresses.

10. (Previously Presented) The wireless LAN system of claim 9, further comprising a dynamic host configuration protocol configured to return a dynamic host protocol configuration request received from one of the plurality of wireless terminals, the returned dynamic protocol configuration request being a subnet different from said subnetwork addresses assigned to the other of each of the plurality of wireless terminals.

11. (Previously Presented) The wireless LAN system of claim 9, wherein the access limiter is configured as a default gateway for the plurality of wireless terminals.

12. (Previously Presented) The wireless LAN system of claim 11, further comprising a wired terminal configured to associate with the access limiter.

13. (Previously Presented) The wireless LAN system of claim 12, wherein the wireless access point receives an address resolution protocol request from the first wireless terminal and transmits the address resolution protocol request to the access limiter and to the second wireless terminal, and

wherein the access limiter returns the request and the second wireless terminal drops the request.

14. (Currently Amended) The wireless LAN system of claim 9, wherein, when the first wireless terminal transmits a packet intended for the second wireless terminal to the access limiter, the access limiter detects that the packet is intended for the second wireless terminal and drops the packet.

15. (Currently Amended) The wireless LAN system of claim 9, wherein, when the first wireless terminal transmits a packet intended for the second wireless terminal to the access limiter, the access limiter performs priority control over the packet among a plurality of received packets.

16. (Previously Presented) The wireless LAN system of claim 9, further comprising a dynamic host protocol configuration server configured to allocate IP address having different subnets for respective wireless terminals that are wirelessly associated with the access point.

17. (Currently Amended) A wireless network router, comprising:
a wireless access point; and

an access limiter comprising a plurality of Local Address Network (LAN) interfaces associated to the wireless access point, the access limiter comprising:

an access limiting apparatus to pass or drop a received packet to thereby inhibit or permit communications between a plurality of wireless terminals; and

a routing apparatus for distributing packets selectively between the wireless LAN access point depending on a destination of the packets between the plurality of wireless terminals,

wherein communication between any of the plurality of wireless terminals is routed through the access limiter, and

wherein each of the wireless terminals ~~[[are]]~~ is allocated a different subnetwork ~~addresses~~address.

18. (Currently Amended) The wireless network router of claim 17, wherein, when a first one of the plurality of wireless terminals is turned on, the first wireless terminal sends a first Dynamic Host Configuration Protocol (DHCP) request to the access point to automatically resolve an IP address thereof,

wherein the access point transfers the received DHCP request to the access limiter and returns a first DHCP response to the first wireless terminal,

wherein, when a second one of the plurality of wireless terminals is turned on, the second wireless terminal sends a second DHCP request to the wireless LAN access point,

wherein the access point transfers the received second DHCP request to the access limiter and returns a second DHCP response to the second wireless terminal,

wherein, when the first wireless terminal transmits a packet destined for the second

wireless terminal to the access limiter, the access limiter transfers the received packet, which is destined for the second wireless terminal, to the second wireless terminal.

19. (Previously Presented) The wireless network router of claim 17, further comprising a DHCP server for allocating IP addresses having different subnets for the respective wireless terminals in response to DHCP requests from wired LAN terminals.

20. (New) The wireless LAN system of claim 9, wherein the access limiter is configured to instruct each of the plurality of wireless terminals, upon activation, to set the access limiter as a respective default gateway for that wireless terminal.